PYROLYSIS AND BIOCHAR

A real benefit for Vietnams coffee production

Hannes Zellweger

Sofies – Emac AG

In collaboration with:

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REPIC Veranstaltung, Mai 2018

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What we see…

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What we see…

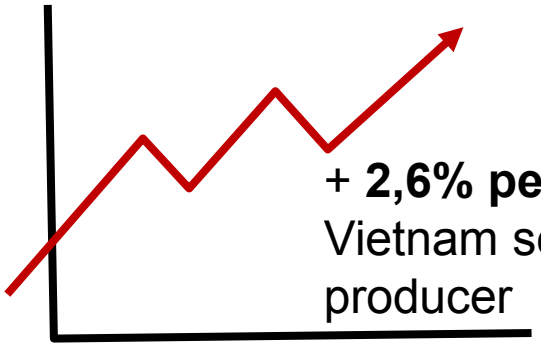
... millions of tons of fresh pulp are waiting to be treated

World Coffee Production: (2017)

159‘663‘000 bags (60kg)

=

20'340'000 tons of pulp



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What we see…

... perfect coffee processing facilities, but no pulp management

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What we see…

... increasing production costs for farmers

High costs for fertilizer and irrigation

Demand for „continuous“ thermal energy

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What we see…

... high smoke generation with current drying methods

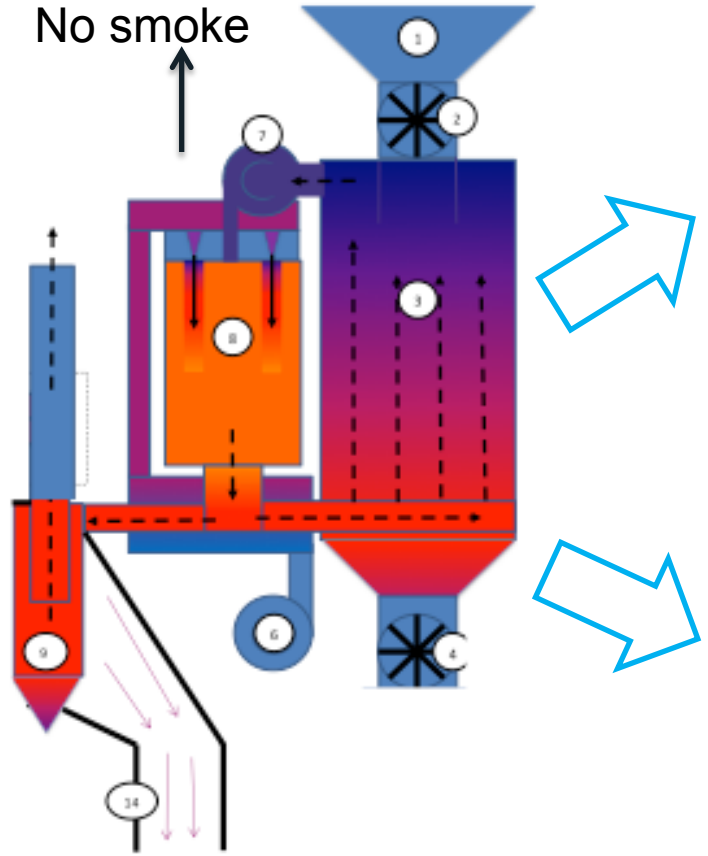
with negative effects both on the health of the local population and the quality of the coffee beans.

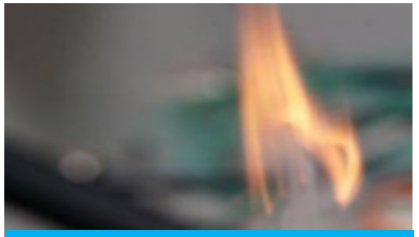
Our value proposition

Using pyrolysis technology for a better pulp management

From “zero” value to a business case for the farmers

pulp





energy (heat)

biochar

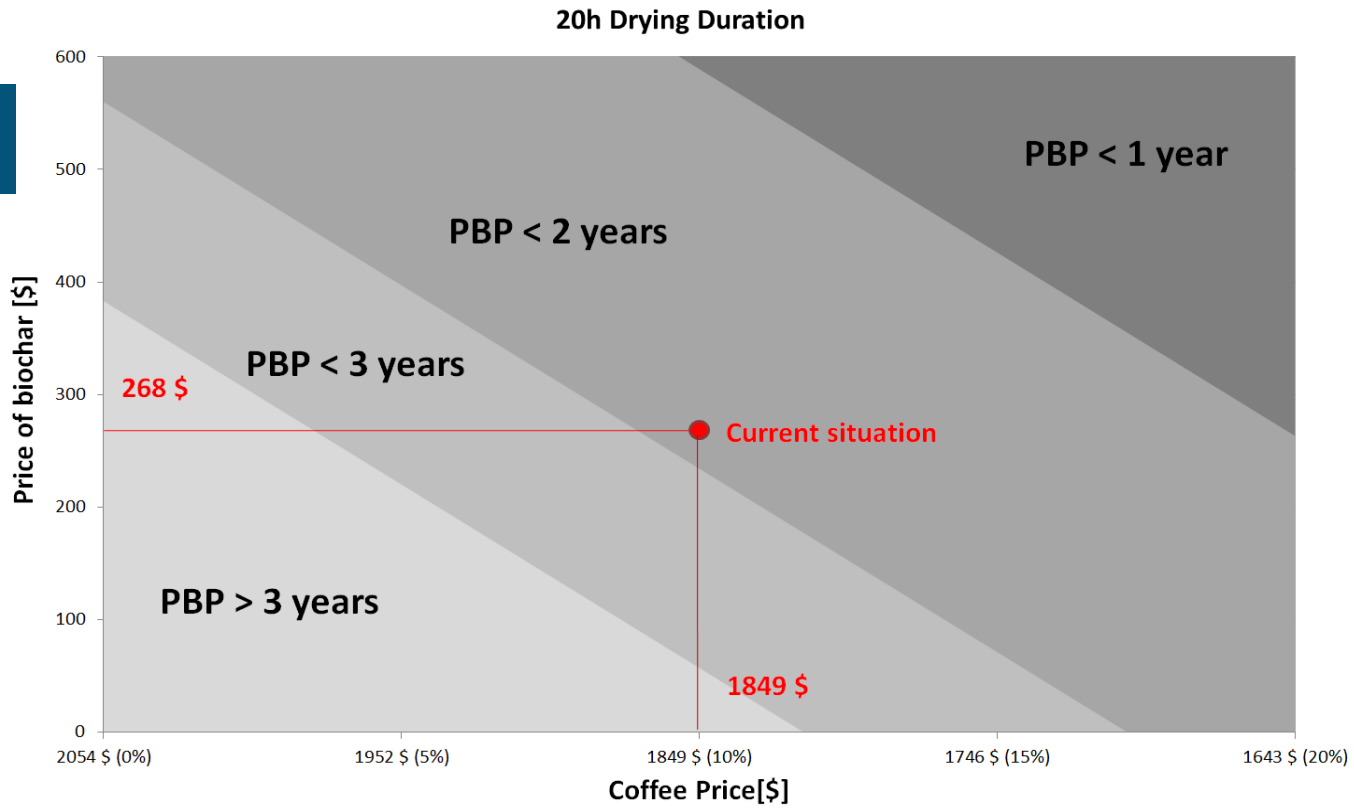
Innovative Business Model…?

Decision to invest is based on:

- Price of machine *(challenge: investment capacity)*

- Price for quality for green beans *(challenge: variable rainfall)*
- Price of biochar *(challenge: acceptance)*

Schweiz
1‘150CHF/ton



Current pyrolysis systems

… not appropriate and/or too expensive for tropical farming

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REPIC Project

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First phase, new product design

- is designed to fit local context
- is affordable
- is compliant with international quality standards
- is scalable for big producers & small farmers
- can be integrated in existing drying systems

Swiss – Vietnamese workshop in Switzerland

Technology Transfer Viet Hien Ltd

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Pilot implementation

(2016-2017)

Hanns R. Neumann Stiftung

REPIC
Renewable Energy & Energy Efficiency Promotion in International Cooperation

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss State Secretariat for Economic Affairs SECO
Swiss Agency for Development and Cooperation SDC
Swiss Federal Office of Energy SFOE

Neumann Kaffee Gruppe

Main results and next steps

REPIC Project:

- Knowledge transfer to Vietnam
- Successful start in Vietnam (3 machines)
- First export (Brazil)

Next Steps:

- Further dissemination in Vietnam
- Start of long-term field study for biochar with multitnationals
- New projects in Peru and Colombia

Success Factors

Strong Network/Partners

- Motivated, trusted and reliable partners
- Integration of regional experts (second opinion)
- Long term partnerships

Strong Business Case and financial "breath"

- Flexibility on the Business Case
- Financially strong investors, 2 years is the absolute minimum for a technology transfer
- Think from the beginning about the post REPIC phase

Time and Communication

- It takes time to build up confidence
- Maintain close contact, make as many visits as possible

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leading sustainability

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forschen | entwickeln | bilden

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Hannes Zellweger
hannes.zellweger@sofiesgroup.com
www.sofiesgroup.com

Transfer of technology to Vietnam:
YouTube https://youtu.be/3rWDJ4qwVhM
Demonstration plant in Vietnam:
YouTube https://youtu.be/SWST8pmsu1M
3SAT Mediathek: Kaffee-Kohle

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Industrial symbiosis & Eco-industrial parks
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Secondary resources and urban mining
Municipal waste and industrial waste

Sustainability

Indicators and reporting
Environmental impact assessment
Eco-innovation Strategies
Sharing Economy